A Health and Safety Guide for Handling Farm Animals and Poultry

SAFE FARMS

Manitoba

Acknowledgements

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- The Canadian Agricultural Injury Surveillance Program
- Food Protection Services, British Columbia Centre for Disease Control

Based on this knowledge, this booklet reflects what we know about the causes and types of work-related injuries and illnesses.

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Introduction

The Canadian Agricultural Injury Surveillance Program (CAISP) provides important information on farm-related injury, illness and death. It collects data from hospitals, coroners' offices and other sources concerning deaths and hospitalizations involving farm work.

Between 1990 and 2000, there were 58 animal-related deaths on farms across Canada:

- Six involved children under 15 years old
- 33 involved people aged 60 or more
- 19 involved people aged 15 to 59

CAISP noted:

- 38 per cent of the deaths were caused by horses by unprovoked kicks
- 33 per cent were caused by bulls
- 20 per cent were caused by cows

Between 1990 and 2000, nearly 8,000 animal-related injuries were recorded CAISP notes:

- 92 per cent of the injuries were caused by cows and horses.
- Cattle injuries were most frequent in March, April, and May and were associated with calving or cows that had recently calved.
- Cattle-related injuries also increased in late fall and were most likely associated to transportation.

This guide addresses safety issues, such as avoiding being struck, trampled, or pinned by an animal. It also addresses the key health issues associated with animal handling.

It is intended for operators of mixed farms, or those who raise small numbers of:

- poultry
- hogs
- cattle (milk or beef)
- bison

- sheep
- goats
- horses
- llamas or alpacas
- ostriches or emus

Information is included on working with hazardous materials such as feeding or bedding livestock.

Basic animal behaviour is included because understanding how animals react and behave is key to ensuring the safety of farm workers and the animals.

This information should be included when farm operators discuss:

- health and safety issues with family members
- new workers or helpers on the farm
- plan improvements to buildings or other structures
- buy new animals, equipment or machinery

Note that not all health and safety issues are covered here. For more information on topics such as hazardous materials, safe equipment operation, emergency response, or responsibilities under Manitoba's workplace safety and health laws, see the resource list at the end of this guide.

Other valuable sources of information include your local veterinarian, feed supply store staff, local commodity specialists and animal safety sources on the Internet.

Understanding Basic Animal Behaviour

"The best way to avoid livestock injuries is to understand animal behavior." Jennifer Woods, B.Sc. Animal Science Livestock Handling Consultant from Alberta.

Many behaviours are common to all farm animals, regardless of species.

- No two animals are exactly the same even the same gender and species. Animals react to things differently.
- Many animal reactions are predictable, and a skilled handler can anticipate them and work with them. However, animals can be unpredictable at times.
- Unusual circumstances can provoke unusual reactions in animals. An animal that is normally calm and slow at home may be agitated in a new environment, or when surrounded by new people or animals.
- Animals fear fire, and may react to smoke in the air before it's apparent to humans.
- Animals can remember incidents and people -- good and bad. These recollections will be especially strong if they were negative, stressful, or frightening.
- Animals that have been poorly handled, with roughness, cruelty, or impatience, will recall these events. They are likely to react when handled by the same person, or in a similar manner. They may even react when handled by someone who simply resembles an earlier rough handler.
- Routine is comfortable and reassuring to animals. They behave best when familiar with feeding, movement and handling patterns. Change is disturbing and should be introduced gradually, calmly, and at a pace animals can adjust to.

- Excitement and agitation are contagious among animals. One agitated animal can often affect the whole group.
- All animals are territorial, to varying degrees. You should **expect** they will react protectively when feeding, mating or protecting their offspring.
- Animals in the wild compete with one another for breeding opportunities. Even domesticated farm animals can be strongly aggressive towards people or animals that seem to be disturbing them during mating.
- All farm animals are descended from prey species, and their behaviour is rooted in the instinct for survival. Domesticated animals remain alert to what they perceive as danger. Their flight-or-fight response will be activated by stressful, unfamiliar or startling situations.
- Unrestrained animals usually begin to react to a perceived threat by trying to move away from the threat. Their flight is part of their instinctive response. If they feel that flight is not an option, they will strike out (the fight response).
- Each animal species is very aware of its own natural defences -- weight, strength, teeth, sharp hooves, claws, spurs, horns, tusks, antlers, etc. Animals will use their natural defences when they feel threatened. Depending on the species, they can head-butt, paw, kick, claw, peck, bite or gore.

Some behaviourals are common to certain types of animals.

- Herd animals (cows, horses, sheep, goats) have a strong instinct to move as a group. They become uncomfortable or even agitated when separated from others in the herd.
- Animals in groups develop hierarchies and will usually follow a leader. An animal that loses visual contact with the leader will try to return to that position of comfort and security.
- Some farm animals are descended from species that were preyed upon by canines (wolves, foxes, coyotes). These animals may instinctively become agitated around unfamiliar dogs.

- Poultry can be very territorial, especially when they are protecting young. Birds in a flock relate to each other through a pecking order of dominance. This can affect a human handler who may become ill, lose footing, fall or is injured in the enclosure. The birds may turn on as a group on that person. This behaviour can also be directed at children.
- Ostriches and emus are not domestic and their behaviour is much more wild than domesticated birds. Their reaction to perceived threats can be swift and very powerful.

Most animals have limited short-term memory. To address this, remember when you have been working around an animal's head, and then need to move to its hindquarters, keep a hand on it to remind it that you're there. If you neglect to do this, you risk a kick if the animal feels startled by your touch on a new part of its body.

Animals' Senses

To understand an animal's reaction, always consider the situation from the animal's perspective rather than your own.

Strain to hear what it may be hearing. Is there thunder in the distance, or is something rustling strangely? Look around and imagine the view as it appears to your animal. Is it seeing a moving shadow, a glaring light or something flapping? Watch as it sniffs the air. Could it have picked up an unfamiliar or frightening scent?

Farm animals have the same senses as humans – smell, touch, taste, hearing, sight – but often in **very different proportions** from our own. Almost all animals have a much better sense of smell than humans. A horse, for instance, may surprise you with its reaction if it picks up the scent of a bear or cougar.

Eye Position

The position of **our** eyes gives us good depth perception and distance vision, but limits peripheral vision. Most animals have a very broad peripheral vision because their eyes are on the sides of the head. Cattle, for example, are able to see almost 360 degrees with just a small turn of the head. Most animals have very poor depth perception and do not focus well on objects directly in front of their heads.

- Horses and cattle must move their heads down to closely examine objects on the ground.
- Livestock may hesitate at the edge of water, simply because they have no way of knowing the depth of what they're stepping into.
- Animals also tend to move from poorly-lit to lighter areas, but do not react well to bright glaring light. Animals that have been in shade or indoors may balk at moving into areas of very bright contrasting light, until their vision has adjusted to it.

Animal Behaviour Can Work in Your Favour

Instead of setting yourself up in opposition to an animal, trying to make it move in one direction or another, use your understanding of animal behaviour to encourage its natural desire to go where you want it to.

Key to this approach is an understanding of the flight zone, and the point of balance. These are the best tools for moving any animal.

The Flight Zone

Each animal has a personal space around it, called the flight zone. How and where you step into it affects an animal's movement. If you come too close to an animal, you enter its flight zone. It will usually try to move away, to re-establish the security of its personal space.

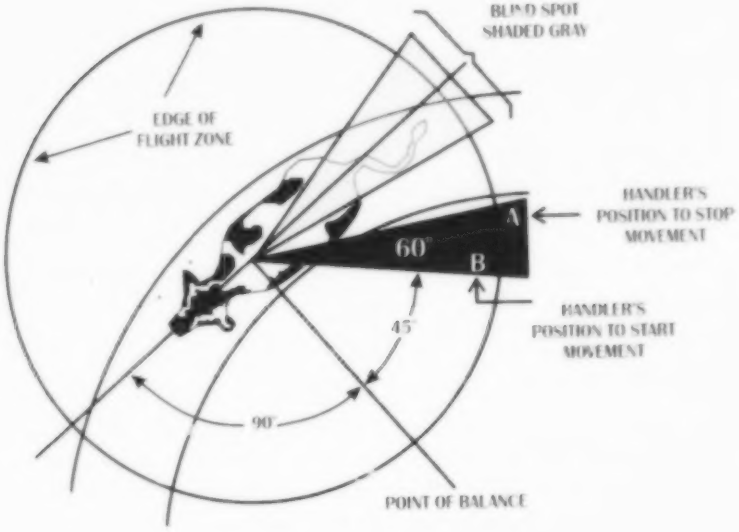
The flight zone may be narrow in animals that usually have close contact with people, but can be very wide for range animals.

Depending on the surroundings and situation, the size of an animal's flight zone will change. A calm animal has a much smaller flight zone than one that is fearful, stressed or agitated.

The Point of Balance

A direct head-on approach into the flight zone will cause an animal to move in the opposite direction, away from you. The point of balance is right at the animal's shoulder. Standing in front of the point of balance will cause the animal to balk or move backwards. Standing at or just behind the point of balance will encourage the animal to move forward.

This is an overhead diagram of a cow. The flight zone is the outer circle around it. The shaded area directly behind the cow is the blind spot, where the animal cannot see anything without swinging its head around. If you stand just outside the animal's flight zone, behind its shoulder (but not in the blind spot), the animal will not feel the need to move (point A in the diagram). If you step closer, into the flight zone (point B in the diagram), the animal will begin to move forward.



This diagram was designed by Dr. Temple Grandin, animal sciences professor at Colorado State University, Fort Collins, Colorado, and the foremost authority on the behaviour of stock animals. (See www.grandin.com for more information on Dr. Grandin.)

Identifying Signs of Animal Distress

Animals show their fear, distress or alarm through their behaviour, which handlers can learn to read. Some are common and some are unique to species. Common signs of distress include:

- avoidance of contact with others in the herd or group, or disinterest in surroundings
- rubbing or pressing forehead on solid surface
- erratic movement, staggering, moving in pointless circles, shuddering, shivering
- excessive or repetitive vocalizing

Some behaviour is a sign of aggression, and should be used as warning of a possible attack:

- pinned or raised ears
- rapid tail movements, flicking, repetitive swinging
- hackle hairs raised on the back of the neck
- pawing
- snorting
- feigned charging movements

Safe Animal Handling Basics

"The three most common mistakes made by handlers are rough handling, excessive prodding and overcrowding." Dr. Temple Grandin

"Do not prod animals if they have nowhere to go." Jennifer Woods, B.Sc. Animal Science

"Do not work animals when you are in a hurry; patience, patience, patience." Dr. Wayne Tomlinson, MAFRI

Understand the Sequence of Reactions

Patience is required when working with any animal. An animal goes through a sequence of reactions as it becomes agitated.

Know your animal, and understand its behaviour. You will have time, when both you and the animal are calm, to see if something is frightening or stressing it. This is your opportunity to slow down, remove the cause of stress if possible, or otherwise calm the animal.

If you ignore behaviour signs at this point, you will miss an opportunity to calm the animal, and could end up struggling with an agitated, unpredictable one. The hazards to both you and your animal will increase dramatically, and it can take 20 or more minutes for the animal to regain its calm.

This is why experienced animal handlers always live by the motto: "Slow is fast."

Design and Maintain Good Working Spaces

As much as possible, ensure that all working areas have evenly distributed light, with a minimum of shadows. Use a consistent color scheme on all surfaces seen by the animals, including walls, ceilings and floors. Floors should all be stable and non-slippery, free of tripping hazards for people, and startling textural changes for the animals.

Use ramps rather than steps for animals and design the most gradual slope possible in the space. In pens, chutes and alleyways, use solid-sided walls to eliminate distractions that may cause animals to balk or startle. Alleyways should be just wide enough for a single animal to move through.

When designing chutes and alleyways, put low platforms outside the chute where people can direct the animals without being enclosed with them.

Any animal enclosure should contain slips or escape routes: narrow openings just big enough for humans to escape. Sometimes called "man gates," these slips should be about 35 cm (14 inches) wide, and braced by posts. You should be able to quickly reach at least one slip or other escape route in any enclosure. Make it a habit to **plan in advance an escape route whenever you work in an enclosure with animals.**

Try to reduce the possibility of startling noises. Rubber stoppers on metal gates and tailgates will cut down on the crashing and clanging noises. Keep fans and equipment well-lubricated.

Pay regular attention to fence and gate maintenance. Gates should work quietly and smoothly, and have easy-to-operate locks.

Remove any electrical cords or other hazards that animals may try to chew on.

If you use or are installing electric fencing, remember:

- Electric fencing requires regular, frequent inspection and maintenance, especially in dry conditions when fires may start if weeds or grass come into contact with live wires or connections.
- If a fence has been damaged by a lightning strike during a thunderstorm; the entire fence or part of it can hold enough power to kill an animal or a person. Battery systems are less likely to pose this type of hazard.

Situations to Watch For

- Young and new workers are at particular risk when handling livestock. You must take the necessary time to train, discuss and demonstrate all the tasks you expect them to do. Make certain the person you are training is mature enough, strong enough and capable of performing each task. Supervise workers closely, until you are certain they can work safely, unsupervised.

- Animal handlers must be confident in their ability to do the job. Animals sense fear and uncertainty and will take advantage of handlers who do not demonstrate confidence. You need to dominate the animal. This does not mean abuse or impatience – just the gentle strength to make sure both you and the animal know who is in charge.
- Long hours or repetitive, tiring activity result in hazardous situations you might otherwise avoid. Be alert whenever handling animals, and if you're getting tired or impatient, take a break or ask for help.
- Wherever you are, start by taking a minute to scan your surroundings. Plan where you will stand, and where you will put any tools or equipment. Always plan an escape route in advance – you may have to move quickly to avoid injury.
- Never turn your back on an animal, or allow yourself to become distracted.
- Work quietly, and do not shout or slam tools around.
- Always approach an animal in its field of view. Never approach from directly in front or behind.
- Never tie an animal to yourself or to a moveable object. Never leave a tied or restrained animal unattended.

Children and Animals

Farm children are usually expected and encouraged to help with the farm operation and chores.

Animal handling requires skill, good judgement, attention and physical strength. A child or young person is developing these qualities, but may not yet be old enough to work around the animals without close supervision. Children mature physically and mentally at different rates – what's suitable for one 13-year-old may be far beyond the strength or ability of another.

If children are working around the animals on your farm, use the *North American Guidelines for Children's Agricultural Tasks* (NAGCAT) as a reference when giving farm chores to children and young people. For a copy of the guide, contact the Provincial Farm Safety Coordinator's office (see contact information at the front of this booklet.)

As well, you should expect that any child on the farm, whether resident, visitor or passer-by, will be naturally curious about the animals, especially newborns and young animals. Children may even slip away from adult supervision to go visit the animals.

Be sure that children are supervised at all times around animals.

Farm Hazards

Working Alone

There are many situations in agriculture where someone is working with animals alone, either in the barn, or out on the farm property. Farm owners/managers must address several questions:

- Does the work being done pose the risk of a disabling injury?
- Could the person get help if he/she were injured?

It has been noted that some animal-handling incidents have ended in tragedy, partly because the injured person was working alone and unable to get help.

Having a cell phone or two-way radio is a good first step. But, if someone was unconscious, seriously injured, or unable to call for help, **how long would it be** before someone else started looking for him/her?

At a minimum, always tell someone where you are going, and when you expect to come back. Discuss what should be done if you do not return at the expected time. Or, arrange to have a reliable person call you regularly. Then, if you do not answer the call, help can be sent without delay.

Hazardous Materials

Most farms have at least some hazardous materials on site, including fuels and lubricants, veterinary preparations, fertilizers, pesticides, antifreeze, paints and varnishes, and so on. **Any** of these can cause serious illness or death to people or farm animals. Your MAFRI GO Office can advise you on good handling, storage and disposal practices for hazardous materials.

Veterinary Medications

From time to time, you may find yourself administering injections or dealing with veterinary issues with your animals.

When working with animal medications, be aware of their potential effects on human health. Dosages for horses or cows can be injurious or fatal if accidentally administered to a person.

It is easy to get stuck with a needle intended for an animal you're trying to inject. To prevent needle-stick injuries, plan your work in advance and use adequate animal restraints. Get help from a second person when necessary. To avoid scratches or cuts, either dispose of used syringes immediately in rigid, sealed containers, or carefully recap veterinary needles right after use.

Note:

- Exposure to animal antibiotics can cause allergic reactions in people who have penicillin-related allergies.
- Some animal antibiotics can be lethal if injected into humans by accident (ex: Tilmicosin or Micotil® can cause heart failure.)
- Did you know that accidental exposure to prostaglandin PGF2-alpha (a reproductive cycle drug commonly known as Lutalyse) can cause miscarriage in pregnant women, not only through accidental injection, but skin absorption as well?
- Did you know that many animal vaccines are "live" and can therefore affect human health if accidentally injected and not promptly treated?

Anyone on your farm with a weakened immune system will be particularly vulnerable to exposure to veterinary treatments. (A weakened immune system can come from diseases like diabetes, alcoholism, HIV / AIDS, or chronic lung disease. It can also come from treatments like chemotherapy; surgical removal of the spleen; or from medications like antibiotics, corticosteroids, or anti-rejection drugs for transplant recovery.) Pregnant woman are especially vulnerable to the effects of veterinary medications and hazardous materials.

If you're not sure of the possible human health effects of exposure to any animal medications, consult your veterinarian.

Dust from Feed and Bedding Products

Both hay and silage can develop allergy-causing molds. As the hay or silage is moved or broken up, mold spores become airborne and can be inhaled. Over time, exposure to this mold can cause lung disorders and respiratory disease. The allergic reaction is commonly called "farmer's lung," although the allergy is only one of the possible problems that can develop.

If you suspect that hay or silage has become moldy, use a respirator or face mask. **Be sure to get the right masks or respirator filter cartridges.** They must be marked N95 or N100 (or HEPA).

Big accumulations of hay also pose a fire hazard. A damp core at the center of a hay pile can get hot enough to smolder, and the hay pile itself provides the fuel. Be extremely cautious if hay has gotten wet. Disturbing the hay may either stir up mold spores, or provide a sudden inrush of oxygen to a hot spot.

Working Around Manure

Even in small quantities, animal manure can be a source of serious illness to humans, especially children, the elderly and those with weakened resistance.

Smaller farm operations do not usually collect large quantities of manure in liquid form, so the very serious hazards posed by manure pits and manure handling equipment are not likely to be a problem. However, if you do collect large quantities of manure, be aware of the danger: deadly gases are produced as the manure decomposes. If the manure is held in a confined space, or any area with limited air circulation, the gases can become concentrated enough to kill without any chance of escape. Farmers must be aware of the hazards associated with manure handling and storage.

Protect Your Hearing – for Life

The noise levels in areas of many farms are high enough to permanently damage your hearing. In fact, statistics show a **higher rate** of noise-induced hearing loss among farmers, than in comparable populations. Sources of high noise include tractor and equipment motors, poorly adjusted ventilation fans and animals in close quarters.

Noise-induced hearing loss usually happens gradually. By the time a person realizes that voices (especially higher-pitched children's voices) are harder to understand, significant damage has already begun.

How do you know if a noise might damage your hearing? As a general rule, if you have to raise your voice to be understood by someone standing at arm's length from you, the noise level is probably above

83 decibels. At or above this level, you need ear plugs or earmuffs to protect your hearing.

Ear plugs and earmuffs can offer the same levels of protection. Earmuffs are useful, short-term, for intermittent loud noises. Keep a pair of good quality earmuffs ready for use at the door of barn areas where the animals make a lot of noise.

If you believe you have already suffered some hearing loss, it is **especially** important to use good hearing protection. Even if you are not as sensitive to loud noise as you used to be, it can still damage your remaining hearing.

Zoonotic Diseases

Diseases that affect humans, and that are transmitted by animals, are called "zoonotic diseases" or "zoonoses" (pronounced ZOO-OH-**NOT**-ICK or ZOO-OH-**NO**-SEES).

You can be exposed to zoonotic diseases by:

- direct contact with animal blood, urine, or feces, if splashed in your eyes, nose, or mouth, or if transferred from your hands to your mouth (while eating, smoking, taking chewing tobacco, or touching your face)
- introduction into your bloodstream through cracked skin, scratches, or open cuts
- inhalation of dust or micro-organisms in the air
- transmission from an infected animal to a human by the bite of a fly, mosquito, tick, or flea

Note:

- Salmonella bacteria, which causes gastro-intestinal illness in humans, can be present almost everywhere on a farm, and are found in almost every species of farm animal.
- Toxoplasmosis, a common parasitic infection of cats and other animals, can cause fever in humans; and cause serious damage health complications for a pregnant woman.
- Capnocytophaga, bacteria that occur naturally in dogs' and cats' mouths, can cause serious illness in humans

with weakened immune systems and death in people with alcoholism or who have previously had the spleen removed.

Always consider that **any** body fluid from your farm animals **may** be carrying a zoonotic disease. As much as possible, use personal protective equipment.

- Use an N95 or N100 mask or respirator when sweeping or stirring up loose dirt and dust.
- Always use disposable latex rubber or nitrile (synthetic rubber) gloves, especially if your skin is cut or chapped.
- Change saturated or badly soiled work clothes as soon as you can.

Anyone working around animals should be hand-washing frequently:

- before and after using the toilet
- before eating or taking a break
- after any contact with animals.

Paper towels, non-irritating soap and nailbrushes should be available at all sinks.

If eyewash equipment is available on your farm, take a few minutes to review how to use it. One type of eyewash station is a small wall-mounted kit, with a specially-designed bottle of sterile liquid and a chart that demonstrates its use. Another type is a simple switch for sink faucets, that directs two streams of water upward to form continuous flushing of the eyes.

Infections can easily be spread on contaminated work clothing. Use a storage area outside of the house for work clothes, boots, gloves and other gear. These should be taken off and dried for future use, or set aside for separate laundering, with plenty of hot water and bleach.

Take seriously any symptoms of disease infection. Working with animals may help people develop some immunity to common infections, **however** this means that if you **do** feel disease symptoms, they should be cause for concern.

If you notice **any** unusual symptoms see a doctor immediately. Make sure your doctor is aware of your work on a farm as a possible

exposure to zoonotic disease. Here are some symptoms to be aware of:

- chronic coughing, difficult or painful breathing
- prolonged fever, night sweats
- unexplained skin rashes or sores
- prolonged intestinal problems, diarrhea, or abdominal cramps

Keep the likelihood of zoonotic diseases in perspective. Most of the diseases described in this booklet rarely infect people, even those who work closely with animals. However, **if** someone does develop a zoonotic disease, the consequences can be significant, so it's important to be aware of the hazards.

Tetanus and Farm Work

Wherever people are exposed to animal wastes and soil, they may be exposed to tetanus. Tetanus bacteria can infect almost any animal. When humans are infected, the resulting illness can be very serious and may lead to death. Deep puncture wounds are the greatest concern. Fortunately, tetanus can be prevented by vaccination. Ask your doctor about getting tetanus vaccinations for everyone on your farm.

Hantavirus and Farm Work

Hantavirus may be present in rodents, particularly deer mice. If the droppings or urine from infected mice become airborne as dried dust, the virus can be inhaled by humans and cause Hantavirus Pulmonary Syndrome (HPS), a disease of the lungs. If not treated promptly, HPS has led to death in about half of the recorded cases.

Only a handful of HPS cases have been recorded in recent years, but despite its rarity, hantavirus should be taken seriously. If you have questions about the possibility of hantavirus exposure in your farm buildings, contact the province's Workplace Safety and Health Division for more detailed information on the precautions you should be taking.

The Hazard of Infection

Researchers with the Canadian Agricultural Injury Surveillance Program report that a striking number of animal-related injuries develop into infections. **Any time** someone's skin is broken (from a cut, scratch,

animal bite, or accidental puncture wound), that person is vulnerable to infection. **The injury must be treated promptly with thorough cleaning and disinfection, and dressed with an antibiotic cream.**

If any swelling develops, this is a sign of infection – take the person for medical attention **without delay.** Some of the infectious agents present on a farm can move very fast through a person's body, progressing from local inflammation to infection of an entire limb and even life-threatening septicemia.

Protective Clothing and Gear

Protective clothing and gear are generally not "all-purpose." **You must be sure that the clothes, gloves or respirator you're using will actually protect you.**

A cheap paper dust mask (sometimes called a comfort mask) will prevent large visible particles of dust from filling up your nose as you work. However, it **cannot** filter smaller particles that can cause damage deep in your lungs. Comfort masks do not filter disease-causing micro-organisms.

Animal handling poses the risk of transmission of disease. To protect against inhaling airborne viral or bacterial particles, you must use a respirator marked as being N95 or N100. Only these respirators have a fine enough filter to protect you against airborne micro-organisms.

Latex rubber gloves may not protect against some of the hazardous materials used on farms. For example, you may have seen latex rubber gloves start to disintegrate on contact with certain solvents. A better choice is nitrile, which is a synthetic, inexpensive rubber substitute.

Many animal handling injuries involve people's feet. Almost all farm animals are heavy enough or have sharp enough hooves to cause a painful injury if you're accidentally stepped on. Always wear sturdy steel-toed footwear when working with animals. The one exception to this is while riding horses, when footwear must have smooth soles and a riding heel for proper use of the stirrups.

Good-fitting light leather gloves are also very useful for many tasks, as they protect your hands from cuts and scratches.

Preparing for all Emergencies

Advance preparation is the best way to reduce the impact of an emergency.

Write a Plan?

Begin by listing the emergencies that could affect your farm. Include anything from a barn fire or a serious animal-related injury to an individual, right up to community disasters like a flood, earthquake, or wildfire. Don't forget to consider forced evacuations that could be the result of a nearby derailment, pipeline leak, or other environmental incident.

Every farm's preparations will be different, depending on location and surrounding terrain, type and number of animals, ease of transportation, availability of alternative locations, etc.

There are four main steps to drafting an emergency plan:

- mitigation
- preparedness
- response
- recovery.

Mitigation or reducing risks and preparedness must be done well **before** an emergency takes place. You should consider these activities **now**. Response (although it is based on advance preparation) is what takes place **during** an emergency. And recovery includes all the necessary measures that take place **after** the immediate emergency to return the operations to normal.

Mitigation

Mitigation refers to all the lasting changes you make on your farm now to reduce the possible effects of an emergency. Operations that include livestock should:

- Secure anything around the farm that could easily spill, blow around, burn, or otherwise create extra havoc during an emergency.

- Install manual pumps or non-powered access to water for the animals if you have to leave them for a period of time.
- Set up a generator system if your farm requires a reliable source of power for heat lamps or other electrical equipment.
- Label all hazardous materials and make sure their storage location remain secure in an emergency and not contaminate wells or feed.
- Carefully reviewing your insurance, to be sure that it will provide the coverage you anticipate you may need.

Once completed, measures like these will **minimize the effects** of fire, flood, an earthquake or storm, or extended power outage. Your local fire department and MAFRI GO Office can help you develop an emergency plan that is tailored to the size and type of your farm.

Preparedness

Preparedness involves making plans in advance, such as checking the first aid kit and other emergency supplies, planning evacuation arrangements, identifying key contact people and information and so on.

Especially on a family farm, practise drills to help reinforce emergency procedures for children and elderly family members. Drills also draw attention to areas that still need work in your plan.

Whenever possible, practise getting all of your animals on trailers to be moved, to prepare them in advance for an emergency evacuation.

First Aid

Depending on the size of your operation, there should be at least one first aid kit, or even one person trained in first aid. Everyone living or working on the property should know where the first aid kit is kept. Everyone should also know how to contact whoever knows first aid, if you have one, or how to get outside help in an emergency.

The location of all emergency supplies (fire extinguishers, first aid kit, eyewash equipment, etc.) should be accessible and clearly marked.

Animal Evacuation Plan

Planning for a partial or full-scale evacuation will allow you to line up alternative locations, make transportation arrangements, assign responsibilities and make sure that everyone understands the plan.

This will reduce the chance of a stressful, unprepared response in which animals or people are more likely to be injured.

Try as much as possible to anticipate:

- Who will direct or lead the animals?
- How will they be transported? Does your farm have enough trailer space, or will extra trailers have to be arranged? In a community-wide emergency, will there be enough trailers if everyone needs one at one time?
- How will you carry the necessary feed, water, veterinary medicines, handling equipment, etc.?
- What route will you use? Is there an alternative route, if your first choice is not available? Contact your local emergency management authority and become familiar with at least two possible evacuation routes well in advance.
- Where will you go? Arranging for a place to temporarily keep your animals may mean working within your community to establish safe shelters for farm animals. Potential facilities include fairgrounds, other farms, racetracks, humane societies, or any other safe and appropriate facilities you can find. Try to choose locations that are not likely to be sharing the same emergency conditions. Don't look for locations that are on the same floodplain, near the same railway tracks, or in the same valley system as the spill, flood or wildfire you may be fleeing.

If you had to choose only some animals to take, which would they be? Can you mark or identify them in some way so volunteer handlers could help you move the animals in an emergency?

It may become necessary to remove barbed wire or other fencing, open gates and consider rerouting any other permanent fencing so that animals may move to high ground in a flood, to low ground during high winds, or to open areas during a fire. During the Okanagan fires of 2004, many ranchers had to cut fences to allow their cattle to find their own way to safety.

Emergency Information Sheet

Develop a list of all the contact information you might need in an emergency, and see that copies of the list are stored in multiple locations. This includes family members or friends who do not live on your farm. Include on the list:

- emergency numbers for your area (911 or others)
- family members and next of kin
- neighbours contact information
- veterinarian and emergency veterinary clinic contact information
- family doctor(s) and local clinic contacts
- poison control, and emergency hydro and gas contact information
- nearest hospital
- insurance agent contact information

Animal Identification

Consider the identification of your animals. How would you reunite with them, if they escaped during an emergency, had to be set loose to fend for themselves or were sheltered in a community pasture?

Make sure every animal has durable and visible identification. This identification should include contact information that will help return the animal to you. In a pinch, duct tape and permanent marker on a halter will be sufficient, but you may be able to come up with something better. The information should include your name and contact numbers, and the animal's name (if it responds to a name). Take photographs of your animals, in case you need to demonstrate ownership.

Response

Response plans cover actions during the emergency. Depending on the type of emergency, an effective response may involve taking cover, moving your animals, fighting a fire or using your first aid.

You will be able to make better decisions if you've already taken care of all the advance preparations and mitigation.

Keep battery-powered radios handy, to stay informed about changes in evacuation orders.

Be ready to leave, once an evacuation is ordered. Evacuate your animals as soon as possible, to allow time for difficult driving conditions. Heavy smoke, high winds, or slippery or flooded roads may make evacuation impossible as the emergency develops.

Emergency transport will cause tremendous stress on animals – exposure to unfamiliar odors and noises, people, surroundings and other animals.

Frightened, disoriented animals present a high risk to you as a handler. Traumatic times can bring out unusual or aggressive behavior. Emergencies like blizzards and slow floods, may make some animals resistant and stubborn. Other more alarming situations, such as flash floods, wildfires, or tornadoes may trigger panic reactions.

RECOVERY

It is important to plan for the period immediately after an emergency. You'll want to get back to normal as soon as possible – even if your property has been damaged, transportation is still disrupted, and supplies like clean drinking water, medicines, or animal feed are not yet available.

Advance planning can make the recovery period easier, too. Make a list, now, of the goods and services your farm would need during recovery after an emergency, and include the contact information for each item.

Biosecurity Measures

In recent years, people have become much more aware and concerned about biosecurity issue, the spread of animal disease and contamination of food and water supplies.

Some possible sources of contamination include:

- people who travel from one farm to another, unintentionally carrying disease agents on their vehicles, shoes, or clothes
- equipment moved from farm to farm, carrying dirt, seeds or micro-organisms
- animals that come into contact with animals from other farms during transport, or during events such as shows, sales or fairs
- farm animals that come into direct contact with infected wild animals, such as rats, mice, raccoons, etc.
- farm animals that come into contact with airborne disease-causing agents, or with fecal matter from infected birds flying overhead
- water from streams or irrigation ditches that may have become contaminated upstream from your animals

Consider the routes of transmission that could affect biosecurity on **your** farm. Here are some of the general measures currently being recommended for farms:

- Restrict human access to the farm property (with signs, fences, and gates) so that farm visitors enter at a single spot.
- Provide disinfectant footbaths, or disposable plastic boots for visitors to wear while walking around your farm.
- Provide a gravel or paved parking area for farm visitors (to reduce the spread of mud from one farm to another).
- Keep containers of disinfectant on hand if equipment, or vehicle tires or undercarriages, need to be washed off.
- Encourage the use of disposable overalls if visitors will be in direct contact with the animals.

For general purposes, the appropriate concentrations of disinfectant are:

- 10 per cent bleach solution

- one to two per cent Virkon solution
- 15 millilitres per litre Chemprocide

The best disinfectant for hands is vigorous, thorough hand-washing with lots of soap and hot water. Anti-micro waterless cleansers may be used as a temporary measure, but these cleansers **must** be rubbed in thoroughly, including under the nails. As soon as hot water is available, hands should be rewashed.

If visitors will be in direct contact with animals or hard surfaces on your farm, encourage them to vigorously wash their hands at the start and end of the visit.

Note that it is not possible to provide up-to-date information on all aspects of biosecurity, as the situation can change rapidly. Further contact information for biosecurity can be found on page 52 and 53.

Working with Animals

Some of the direct hazards of animals will seem obvious to anyone who works around them. Animals can kick, bite, squeeze you against a wall or fence, or step on you.

Other hazards may not be so obvious such as transmission of diseases when humans come into contact with the blood, saliva, urine or feces of infected animals.

Poultry

Tips About Behaviour

This section generally applies to chickens, turkeys and fowl such as ducks and geese, raised for meat, eggs or both. They may be housed indoors, outdoors or run free.

Poultry that are stressed by fear, change, climate, or any other concern will be more difficult to handle and pose a greater risk of deliberately or inadvertently hurting you.

Birds are easily affected by changes in their immediate environment. For example, heat or cold will prompt a response and may generate health concerns.

Flock behaviour means that some birds may begin to turn on those they perceive as weak or defenseless. Be aware that this behaviour may not only be directed at other birds -- children can be at particular risk for injury by chickens or turkeys. If you are ever cut, injured or become ill inside an enclosure with poultry, you must leave immediately to reduce risk of attack. This is particularly true if you are bleeding.

Poultry show their alarm and distress with sudden flight, sharp squawks; they may seek hiding spots.

Good Practices around Poultry

Approach the birds in a quiet, confident, easy-moving manner that does not raise alarm. Calm birds will not try to take flight. However, poultry flying about an enclosure can cause unintentional injury. Calm birds can be gently moved in a "herding" movement along the ground.

Catching poultry involves important skills – both for the birds' well-being and your own. It is easiest to catch birds in low or blue light. Birds older than 13 weeks should be carried by both legs or both wings. When releasing them, try to place them on their feet. Turkeys and larger breeds of chickens require greater support and should be carried by both legs and one wing.

Never handle a chicken or turkey by the head, one wing, or one leg. This will create an out-of-control panic response in the bird. You may injure it and will almost certainly cause it to scratch or peck you.

The fear and distress of the one bird will rapidly communicate itself through the whole flock.

Use care when placing the birds into cages, and insert each bird headfirst. Be aware of the door closures, to avoid pinching and file down any sharp edges on cage doors.

When moving chicks from the hatching tray, lift each chick gently and place it down, rather than tipping the whole tray. Chick trays can be heavy and awkwardly-shaped. Lifting these trays can cause back strain, so be sure to let your bent legs carry most of the weight as you lift.

When gathering eggs, pay attention to the behaviour of the roosting hen – she may try to peck as you retrieve the eggs. This can be particularly frightening to children who are asked to bring in the eggs. Be sure that any child working around poultry is mature and confident enough to move a roosting hen.

Good Design of Working Areas

It is recommended that you make a habit of always using an N95 or N100 respirator mask when working closely with poultry. At the entrance to the coop or pens, keep a handy supply of masks and respirator filters, as this will encourage everyone to use them regularly.

If you raise poultry for meat and do your own slaughtering and processing, there are many health and safety issues to be aware of. These include choice of working surfaces, cleaning and sterilizing tools, disposal of viscera, etc. Specific recommendations for slaughter and processing can be obtained from the Canadian Food Inspection Agency. See contact information on page 52.

Protection from Disease

Some of the zoonotic diseases that can be transmitted from poultry to people are:

- campylobacter
- influenza type A
- psittacosis
- salmonella.

More detailed information on these diseases is provided in the Glossary at the end of this booklet.

Be attentive to your own personal hygiene whenever you work around poultry. Protect your skin as much as you can from dirt as well as from scratches and cuts, by wearing rubber gloves, an apron and even rubber sleeves. Wear a mask marked N95 or N100 to protect yourself from airborne dust that may carry disease. Wash your hands, arms, and face thoroughly after contact with the birds, their bedding, pens or enclosures.

Avian flu

Influenza (flu) is a broad term for many hundreds of related types of viral infections. To avoid confusion about the different types of influenza, here are three important distinctions:

- **Seasonal (or common) flu** is a respiratory illness that can be transmitted from person to person. Most people have some immunity and a vaccine is available.
- **Pandemic flu** is virulent human flu that causes a global outbreak, or pandemic, of serious illness. Because there is little natural immunity, the disease can spread easily from person to person. Currently, there is no pandemic flu.
- **Avian (or bird) flu** is caused by influenza viruses that occur naturally among wild birds. The H5N1 variant is deadly to domestic fowl and can be transmitted from birds to humans. There is no human immunity and no vaccine is currently available.

Currently H5N1 avian flu has affected domestic poultry in many parts of the world, and the rare human cases have generally been linked to very close contact with infected birds. Immediately contact your local veterinarian if you detect unusual illnesses or deaths in your flock.

Hogs

Tips about Behaviour

Hogs are sensitive and frighten easily. They have poor eyesight and depth perception. They have a very wide circle of vision that extends almost 310° to everywhere except directly behind their heads.

Hogs can seem small, because they are generally low to the ground. Do not be misled by this. These animals are **very** strong, have a lot of body weight behind them when they move. They also move very fast when frightened, challenged or on the offensive.

Note also that hog behaviour varies, depending on their age and sex. Boars and older sows are considered more dangerous. Boars that have not been de-tusked can inflict serious injury and have caused a number of handler deaths in Canada.

Signs of distress in hogs include lying down, refusal to move and panting. If this is the case, leave the animals alone. Sows may bite at fences, walls, or people after farrowing. Their voice may lower and they may become more edgy.

Of special note is the sound made by hogs. The squeal of a hog does not necessarily mean that it is in distress. Hogs will make this noise for no apparent reason at all. Hog squeals, though, are loud and high pitched enough to cause serious hearing damage to a person. When working around hogs, always use hearing protection. Keep a clean set of ear muffs hanging by the entrance to the hog barn. It will encourage everyone to use them regularly.

For more detailed information on hog-raising health and safety, see the Manitoba Pork Council's *Workplace Safety and Health Manual for the Pork Industry.*

Good Practices around Hogs

Always wear sturdy footwear with steel toes because hog hooves are sharp. You may also find it helpful to wear hockey-type shin pads to protect your lower legs when working around hogs.

Move quietly among hogs. Do not startle them or awaken them suddenly. Aggressive handling (sudden awakening, throwing cold water, etc.) can cause heart attacks in hogs.

Use caution when mixing pigs or introducing a new hog into the pen. Hogs that are mixed quickly or are overcrowded can become very territorial and aggressive and may injure each other.

If you are injured and fall, or are knocked down, hogs may lie on you or continue the attack by biting. If you are ever injured in a confined area with a hog, you must get out immediately, especially if you are bleeding.

Moving Hogs

Hogs can be difficult to move. Use a quiet, firm, confident, patient approach and go slowly.

Never allow anyone on your farm to kick at hogs to move them. Their immediate reaction may be to turn and strike out and their longer term reaction may be to become stressed and more unpredictable with other handlers.

Make and use hog panels: plywood boards with hand-holds cut out. These can be cut to fit the alleyways on your farm. Don't use the board to chase the hogs, but allow the animals sufficient space and time to find their own way.

Plastic shakers or slappers can be used to create a small noise so the hogs can be steered forward. Never strike a hog directly with one of these tools.

Hogs can be encouraged to move backwards by placing a bucket, box or covering over their head. They will immediately try to back out of the covering object and can be steered into the desired location.

Good Design of Working Areas

When designing or modifying hog barns or pens, consider these facts:

- Hogs can jump as high as a metre, so sturdy enclosures must be at least that high.

- Lighting is particularly important to hogs, as they can be very sensitive to abrupt changes in light levels and may balk at being moved into brightly-lit areas.
- Hogs are sensitive to abrupt changes of temperature and may also balk or move slowly if they perceive a change from hot to cold or vice versa.
- If possible, keep the flooring consistent wherever the hogs will be moved, because these animals can detect changes in the texture of the surface and may resist being moved.
- Do not try to force hogs to step up or down. Build ramps wherever needed.

Protection from Disease

Some of the zoonotic diseases that can be transmitted from hogs to people are:

- acariasis
- campylobacter
- influenza type A
- leptospirosis
- listeriosis
- ringworm
- salmonella
- streptococcus
- erysipelas.

More detailed information on these diseases is provided in the Glossary at the end of this booklet.

Cattle

Tips About Behaviour

Cattle behaviour varies depending on the breed. Some are considered more excitable, so it's worth learning about your specific breed.

Cattle are herd animals that react best when kept together. Since their instinctive reaction is flight, they will stampede in a group if frightened.Cattle have blind spots directly in front and behind and poor depth perception.

Dairy cows develop habits based on their daily routines. Heifers, because they have not yet developed the same habits, are more unpredictable. Cattle show distress by milling or circling, bawling or feigning charges.

The Canadian Agricultural Injury Surveillance Program notes there were 37 cattle-related handler deaths on farms in Canada between 1990 and 2000. Of these, at least 22 involved bulls, and another six were identified with cows that were calving or protecting very young calves.

The behaviour patterns of an individual bull **will change** as it gets older. Many of the handlers, whose deaths were caused by bulls, did not appear to be doing anything new or unusual. Yet, the bull reacted differently than it had in the past. **Do not take anything for granted when working with a bull.**

A striking number of the deaths associated with cattle handling happened to people working alone with the animals, including bulls. Working alone means there's no one to help out if the situation gets difficult. It also means that if you are knocked down or injured, there's no one to distract or ward off an agitated animal. Working alone also means that critical time is lost in getting emergency treatment – time which can make the difference between survival or death!

Good Practices around Cattle

When working in close proximity to the animal, be aware that cattle kick forward first and then strike backward. The leg starts from the position it is in, makes a forward slightly circular motion and then is

extended backwards. The force at either end of the blow can cause serious injury.

Humanely restrain the animal's legs, particularly when working in the flank and udder area, or upon the feet. Use restraining devices such as a squeeze whenever possible if doctoring an animal.

Whatever method of pressure you have used to advance the movement of the cow, stop or release that pressure when you have obtained the desired result. Tail twisting can work, but release it when the animal has done what you want.

If you are halter-breaking your animal, never tie it to yourself, a vehicle, or a moveable object.

Protection from Disease

Some of the zoonotic diseases that can be transmitted from cattle to people are:

- acariasis
- anthrax
- campylobacter
- cryptosporidiosis
- e. coli
- leptospirosis
- listeriosis
- milkers' nodules
- Q fever
- ringworm
- salmonella
- streptococcus

More detailed information on these diseases is provided in the Glossary at the end of this booklet.

Bison

Tips About Behaviour

Bison (buffalo) are not domesticated in the same sense as cattle. Their herd instincts and wild behaviour are very strong. They have very poor vision, so any nearby movement may initially be perceived as a threat.

Bison normally move very slowly and need to be able to see each other during movement. Keep them together and allow their strong herd instinct to help move them. They will follow a leader, so if you are able to identify the leading animal and encourage it to move, the rest of the herd will not require the push often applied to other livestock movements.

Be aware, though, that bison are very fast and can run with reckless abandon for short distances. They are extremely dangerous when moving at high speed. Their key defensive resources are sharp hooves and a powerful kick, and ramming behaviour with a thickly-furred head and very strong skull.

The speed, bulk and poor vision of bison make them very difficult to stop if they become agitated, aggressive, or frightened or stampede. The best means of avoiding this danger, and the real challenge in the raising of bison, is to always keep them quiet.

Note, too, that stressed or agitated bison will most often try to return to the last place they were secure and undisturbed. Signs of distress in bison include milling, pushing and shoving and arched tails.

Good Practices around Bison

When working with bison, be patient, confident and organized. Plan your work in advance and ensure it can be done effectively and efficiently, with minimal waiting time for any animal in holding facilities, chutes or alleyways.

Work in a manner that cannot be perceived by the bison as threatening. Remain quiet and calm and avoid any arm-waving, yelling or striking actions.

Remember that bison are wild animals and their behaviour is still very much a product of their defence against a predator's attack. For this reason, most handlers work bison from the ground rather than from catwalks or fence rails above the animal. However, be aware that working from the ground in close proximity to the animals puts you at much higher risk of injury. In recent years, serious injuries have been recorded in Canada that included goring, kicking and being squeezed between a bison's body and a solid surface.

Good Design of Working Areas

Bison are difficult to raise. In addition to the demands on handlers, bison require specially prepared facilities for their own and their handlers' safety. Their size and power is much greater than cattle and their natural tendency is to ram or head-butt enclosures. Ensure that your facilities and pastures allow sufficient room for these large animals. Overcrowding can create challenges among the herd for dominance and promote aggressive behavior.

It can be tempting, if you have a quiet herd, to simply use cattle fencing. However, this practice can create dangerous situations if the bison choose to stress the facilities and fencing. Build or adapt your facilities for bison including: fencing, chutes, pens, squeezes, alleyways.

Protection from Disease

Some of the zoonotic diseases that can be transmitted from bison to people are:

- acariasis
- brucellosis
- leptospirosis
- listeriosis
- ringworm
- salmonella.

More detailed information on these diseases is provided in the Glossary at the end of this booklet.

Sheep

Tips about Behaviour

Like most livestock, sheep are sensitive to change. Sheep are particularly affected by movement from darker to lighter areas, from warm enclosures to outdoor pens and even by changes in climate.

When working with sheep, allow them to set the pace, so they will stay calm. Frightened sheep are very hard to gather, move, or work with, as they become very unpredictable. If stressed, frightened or disoriented, they may even bunch up and try to climb upon each other.

Sheep have poor depth perception, particularly when their heads are up. If a sheep is looking down, allow it sufficient time to gather information about obstacles, footing or surfaces rather than forcing it to move along as fast as you may want it to.

Rams use head-butting to establish dominance in a flock. Head-butting can increase if the animals are stressed or overcrowded. You can also unintentionally bring on a head-butt by patting or scratching a ram on the forehead, as it may interpret the contact as a challenge.

Good Practices around Sheep

Sheep are not usually aggressive, but they can cause injuries through flight when frightened. For example, they may jump when stressed and hemmed in. If a sheep makes its way down an alleyway and begins to run, a handler may attempt to block the escape route. The blocked sheep may then jump at the last second, striking the handler in the chest.

Sheep need to be handled gently but with confidence. Know where you want the sheep to go and ensure they can easily arrive there with no obstacles (which can cause the drove to split or circle).

Rams can cause injury to handlers by butting and special caution should be used when handling them. Always keep a ram in clear view and never let down your guard.

When using dogs to help move sheep, ensure they are trained and under control at all times.

If the sheep are being protected or monitored by another animal (such as a dog, llama or donkey), be aware that the guard animal may see you as a threat. Before trying to approach guarded sheep, first establish that the guard animal accepts your movements near the flock.

Special Issues for Shearing

Work with an experienced shearer before trying this on your own, as there are special skills involved in holding the sheep to avoid being kicked or head-butted. Be aware, too, that sheep that have been recently shorn must be closely monitored. They'll need protection from the elements to avoid hypothermia from the cold or sunburn if shorn in warmer weather.

Good Design of Working Areas

Depending on the scale of your operation, you may have a dedicated shearing area. Design a shearing area that is flat, free of any obstructions or debris and restricts the movement of the animals if one is able to break free of the handler's grip during shearing.

Protection from Disease

Some of the zoonotic diseases that can be transmitted from sheep to people are:

- acariasis
- anthrax
- leptospirosis
- listeriosis
- orf
- Q fever
- ringworm
- salmonella

More detailed information on these diseases is provided in the Glossary at the end of this booklet.

Goats

Tips About Behaviour

Goats are usually considered more difficult to handle than other livestock. They are herd animals and tend to move in family groups, so it's important to observe the group of animals and identify the dominant leaders (usually older females).

Goats are prone to stress and fear may cause them to lie down or to huddle in a tightly packed group. They can also get overheated when stressed, so plan your work for cooler times of the day, and watch for signs of distress or overheating. Allow goats to keep one another in sight, as isolation from others will increase their stress.

Stressed animals become unpredictable and pose a greater risk of injury to themselves, other animals or their handlers.

Good Practices Around Goats

If lifting a goat, support it fully by holding it around the body. Never allow anyone on your farm to lift a goat by its head, horns, ears or legs. You may find it helpful to direct the movement of goats by using shaker paddles.

While more tame goats can be easier to work around, they can also be harder to move. If this is the case, try leading them with a halter, or a bucket.

Experienced goat handlers point out that horns can be both an advantage and a disadvantage. Goats can be restrained by their horns, but the presence of horns also means that human handlers and other animals are at much greater risk of injury. A good compromise is to allow horn growth, but keep the tips trimmed or blunt.

Good Design of Working Areas

A small pen is usually sufficient for most goat care and if the goats have been accustomed to entering the pen for reward (feeding), they will enter it more readily for routine care like hoof trimming. If possible, provide yourself with a milking or trimming stand and a restraint system for tasks like hoof trimming.

Design goat enclosures and pens with the safety of both animals and humans in mind. Provide secure footing, by spreading coarse sand under the bedding material. Goat enclosures need higher fences and gates than those used for sheep. Larger breeds need fences to be extremely high and sturdy.

Provide lots of space for goats and keep larger and smaller animals separated. Overcrowded animals react to their conditions with aggression and increased dominance -- horn-hooking, bunting, confrontations.

Sheds or protective shelters will allow the animals to stay dry and find shade when it's hot.

Protection from Disease

Some of the zoonotic diseases that can be transmitted from goats to people are:

- acariasis
- anthrax
- leptospirosis
- listeriosis
- orf
- Q fever
- ringworm
- salmonella.

More detailed information on these diseases is provided in the Glossary at the end of this booklet.

Horses

Tips about Behaviour

Horses can vary greatly in attitude, compliance, personality, temperament and training. The breed of the horse may also influence the horse's behavior. Hot bloods (Arabians, racehorses) tend to be high strung. Warm bloods (quarter horses, pleasure horses, Morgans, Appaloosas) are calmer by nature. Cold bloods (Clydesdales, Percherons, heavy horses) are usually the calmest.

Horses rely on a very good sense of smell to recognize the familiar and react to new situations. Usually, horses are curious about new scents, but they may also react with alarm or fear. Horses also have extremely good hearing. A horse's ears are always in motion, as it tracks the sounds around it.

Horses do not have very good vision, even in daylight. In dim light, they see very poorly and can be easily startled.

With one eye on each side of the head, most horses can easily see the wide sweep of their surroundings, but they cannot use both eyes to focus clearly on a distant point without swinging their heads to face that direction. Horses cannot clearly see nearby objects above their eye levels and may swing their heads up, trying to focus their vision.

They have blind spots directly in front and behind and have poor depth perception. Horses can be excitable. They may be startled by unusual or new sights or even by familiar situations, if taken by surprise.

Horses can strike and kick with any foot. They show their distress or displeasure in a variety of ways including tail-swishing, raised head, and pinned-back ears.

Good Practices around Horses

The Canadian Agricultural Injury Surveillance Program notes there were 29 horse-related deaths on farms in Canada between 1990 and 2000. In 10 of these deaths, a rider was thrown. Eight of the deaths were caused by a kick (to a handler or to someone standing too near the horse) and another six involved being struck by a horse either outdoors or in a stall.

Begin by checking that all your tack is in good repair. Wear appropriate clothing and protective equipment. Always use appropriate riding boots – high in the heel, with smooth soles. Consider using bell stirrups, which are less likely to catch your foot if you're thrown or the horse falls.

Approach the horse quietly and with confidence, from the left or "on side" of the horse. Many horses have been trained to be approached and mounted from either side, but all are trained to accept a rider from the left.

Never approach a horse in a group with treats or buckets of feed. If you must use treats to catch your horse, put a bucket out for each horse in the enclosure. Space the feed out to stop one horse dominating the feed piles or buckets.

Ensure you are properly tacked up; your saddle is adjusted and fits well; and the cinch is securely tightened. Stirrups should allow easy foot movement in or out. A good general rule is to have your ankle line up with the bottom of the stirrup.

Handle your horse often, and gently, to reinforce good behaviour. Practise new things in a controlled environment, with supervision if necessary.

Do not try to pick up a horse's feet unless you've been trained to do so. Have an experienced person show you this skill.

Never tie a lead rope to yourself, or wrap the reins around your hand. If a horse is startled or suddenly tries to pull away, you are at risk of being jerked off your feet, dragged and seriously injured.

When riding, follow single file and allow enough room between you and the horse in front to avoid conflict between the horses (at least one full horse-length, or more if the individual animals seem to need it). If space permits, you can ride abreast, but be alert to any restriction in the route ahead and bring the horses back into single file before they start feeling crowded. While riding abreast, allow at least one body width between the horses, to prevent contact or entanglement.

Choosing a Horse

When choosing a horse, consider who will be riding it. Always match the horse to the rider's ability, and avoid the temptation to put more horse under a child than he or she need or can handle. For a novice rider, it is better to choose a horse that they will grow out of than one that you hope they can grow into.

Protection from Disease

Some of the zoonotic diseases that can be transmitted from horses to people are:

- acariasis
- anthrax
- leptospirosis
- listeriosis
- ringworm
- salmonella
- streptococcus
- West Nile virus
- western equine encephalitis

More detailed information on these diseases is provided in the Glossary at the end of this booklet.

Llamas and Alpacas

Tips about Behaviour

Llamas and alpacas species come from a cold, dry climate. They are very sensitive to heat and can become distressed in warm or humid conditions. Learn the stress signs of these animals and be prepared to take immediate action if a llama or alpaca shows signs of overheating.

Animals of this family have a well-defined flight zone. This can be used to move them. Llamas and alpacas also follow herd behaviour in groups.

Despite their appealing appearance, these animals are typically not affectionate towards humans. A llama or alpaca should not be touched unless you know it to be comfortable with this level of human contact. However, animals that interact frequently with people do become more accustomed to the contact.

Frequently, a single llama may be used as a guard animal, usually with a flock of sheep. Be aware that any llama and alpaca will defend the territory it considers its own. Intrusion into the territory may provoke a charge. This reaction can be very strong in an animal that is guarding others. Llamas are especially antagonistic to dogs and are naturally defensive towards wild canines.

Llamas and alpacas show distress with clucking noises, posturing and strutting.

Good Practices around Llamas and Alpacas

Llamas that are accustomed to human contact will often stand still when the handler places their arm(s) around the neck of the animal.

Do not restrict the vision of a llama or alpaca when attempting to move it. If the animal cannot see, it will stop moving and probably go to ground.

It is sometimes possible to move an individual animal by approaching it when it's lying down, interlocking your fingers behind its head and sliding it along the ground. Some experienced handlers are able to cause an animal to go to ground by blindfolding it and then sliding it this way.

Llamas and alpacas give warning of their discomfort by spitting. Do not disregard this warning. A spitting animal is planning to either charge or run away.

Children should work with an experienced handler and be supervised when working around llamas or alpacas.

Protection from Disease

Some of the zoonotic diseases that can be transmitted from llamas or alpacas to people are:

- acariasis
- Q fever
- ringworm
- salmonella.

More detailed information on these diseases is provided in the Glossary at the end of this booklet.

Ostriches and Emus

Tips about Behaviour

Ostriches, emus and other flightless birds (such as rheas) are also called "ratites." These birds all require specialized handling skills. Their natural defences are their beaks, large sharp talons and powerful wings. They can easily outrun a person.

Ostriches can be prone to panic and can shift from calm to agitated very quickly. Be alert to anything that may change the environment around these birds, because it's easier to control their surroundings than it is to manage a group of agitated large birds.

The safest place for a handler is to the side of one of these birds, so the approach must not cause alarm. Facing an ostrich head-on makes you vulnerable to a kick.

These birds are curious and can often be enticed by their curiosity to move. However, use bait as a lure only with a lone bird -- never if birds are in a group.

Ostriches and emus sit at night to sleep. They are calmer in the dark, so you can take advantage of this to approach them while they are sitting.

Good Practices around Ostriches and Emus

Experienced handlers use a number of specialized tools, including boards, hooks (shepherd's crooks) and restrainers like brooms. Because of the risk of injury to the birds or people, handling techniques must be learned from someone more experienced.

Birds that have become accustomed to human contact are much easier to work with, so young birds should be handled gently.

When trying to catch an adult bird, try to have a quieter bird between you and the one you are hoping to catch, as you approach. This will prevent an alarm reaction.

To catch a bird, take the top of its neck and slowly lower the head close to the ground, or catch its head. Place a hood over the eyes and neck and lower the head toward the ground. The bird can be carefully

led with a bag on its head. Moving the bird can be easier with the bird unable to see and may allow you to lead it without incident. Be aware, though, that the bird may try to run blindly and without thought, hitting objects, other animals or the handler. These heavy birds can cause injury through this type of panicked movement.

Try to walk the bird with three handlers, one holding each wing and one pushing from behind.

Birds that can be approached and are quiet, can have a rope placed around the chest to slow down flight. Use extreme caution in this and always be prepared to let go of the rope if the bird starts coming directly towards you. If the bird is accustomed to being handled, it may be possible for one experienced person to rope and then move it, by pushing gently from the back of the bird and steering it.

If the birds must be moved in a group or herd, use an established object like a fence or a wall to help guide them.

Good Design of Working Areas

Ostriches require very good fencing, as they can slip through or go over strung-wire stock fences. Use page fencing and make sure it is well above the height of the birds' chests.

Protection from Disease

The key zoonotic disease that can be transmitted from ostriches and emus to people is salmonella.

More detailed information on this disease is provided in the Glossary at the end of this booklet.

Farm Dogs and Cats

Farm dogs and cats have been known to cause serious injury (and subsequent infections) to both adults and children.

The Canadian Agricultural Injury Surveillance Program notes 39 injuries from dogs on farms that led to hospital visits between 1990 and 2000. A further 16 hospital visits were caused by cats on farms. Many of those injured by farm dogs or cats have been children.

All children who interact with dogs must be taught some basic ground rules:

- Let a dog approach you, don't rush at a dog. Let it sniff you.
- Don't tease, pull, poke or tickle a dog.
- Don't bait or grab at a dog's food or toys (even inmake-believe).
- Rough-housing can be interpreted by dogs as an invitation to bite.
- Never turn your back and run from a dog. Running can be interpreted by dogs as a prey reaction and can provoke a chase or even an attack.
- Never try to intervene in a fight between dogs.

Everyone on your farm, even visitors, must understand that farm dogs and farm cats are usually not house pets and have not been socialized to react affectionately to humans.

Farm dogs are typically territorial and will want to protect their area – initially by barking and sometimes by biting or all-out attack. You may have dogs that are specially trained to herd or guard livestock, and farm visitors (especially children) will not understand this unless it's clearly explained to them.

Barn or stable cats lead a semi-wild predatory existence, hunting for mice and rats. They do not usually seek human affection or respond well to being chased, picked up or being held or played with. A scratch or bite from a struggling barn cat can cause any of a number of serious infections in people.

Protection from Disease

Some of the zoonotic diseases that can be transmitted from farm dogs to people are:

- acariasis
- campylobacter
- capnocytophaga
- dipylidium canis
- dirofilariasis
- echinococcosis
- giardia
- leptospirosis
- pasteurellosis
- rabies
- ringworm
- salmonella
- scabies

Some of the zoonotic diseases that can be transmitted from farm cats to people are:

- acariasis
- bartonella
- capnocytophaga
- dirofilariasis
- pasteurellosis
- rabies
- ringworm
- salmonella
- toxoplasmosis

More detailed information on these diseases is provided in the Glossary at the end of this booklet. For more specific local information on diseases of dogs or cats, consult your veterinarian.

Appendix – Resources and Contacts

Other Resources

The Provincial Farm Safety Co-ordinator
801 – 401 York Avenue
Winnipeg, MB R3C 0P8
1-800-282-8069 ext. 2315
Fax: 204-945-6134
E-mail: safefarms@gov.mb.ca
Website: manitoba.ca/agriculture/farmsafety

The Workplace Safety and Health Division
200 – 401 York Avenue
Winnipeg, MB R3C 0P8
1-800-282-8069 ext. 3446
E-mail: wshcompl@gov.mb.ca
Website: www.safework.com

Canadian Agricultural Injury Surveillance Program:
Website: www.caisp.ca

Canadian Food Inspection Agency:
204-789-2001
Website on Animal Disease Control:
www.inspection.gc.ca/english/anima/heason/disemala/disemalae.shtml

Reportable Diseases, Immediately Notifiable and Annually Notifiable Diseases (booklet):
www.inspection.gc.ca/english/anima/heasan/diseamala/guidee.pdf

North American Guidelines on Children's Agricultural Tasks (NAGCAT):
Website: www.nagcat.org

Animal Health Care (Canadian Veterinary Medical Association):
Website: www.animalhealthcare.ca

Dogs and Kids:
Website: www.dogsandkids.ca

Dr. Temple Grandin, animal handling specialist:
Website: www.grandin.com

Jennifer Woods, livestock handling specialist:
Website: homepagemac.com/livestockhandling

Cherry Hill, writer and educator on horse handling:
Website: www.horsekeeping.com

Glossary of Zoonotic Diseases

Based on the most recent information, these are the diseases known to be present or possible in farm animals at this time.

Anthrax. A rare but potentially very serious illness, caused by inhalation, or skin or oral contact with bacteria. Farm animals that may transmit anthrax to humans: cattle, sheep, goats, horses.

Acariasis. A mite infestation that causes mange in animals. Acariasis is transmitted to humans by direct contact, causing itchy irritated skin. Farm animals that may transmit acariasis to humans: hogs, cattle, bison, sheep, goats, horses, llamas and alpacas, deer and elk, rabbits, dogs, cats.

Bartonella. Also called cat scratch fever, this bacterial infection is transmitted from cats to humans through cuts, scratches, or animal licks, and causes serious internal infection.

Borellia. See Lyme disease.

Brucellosis. A bacterial disease rarely found in domestic animals, but sometimes locally common in wild populations of bison, deer, and elk; transmitted by direct or oral contact, causing fever and internal infection in humans.

Campylobacter. A gastro-intestinal illness, caused by oral contact with micro-organisms in feces. Farm animals that may transmit campylobacter to humans: poultry, hogs, cattle, dogs.

Capnocytophaga. Bacteria that occur naturally in dogs' and cats' mouths, and can be transmitted to humans via broken skin from scratches or cuts, causing fever and then serious illness.

Coxiella. See Q fever.

Cryptosporidiosis. A gastro-intestinal illness, caused by oral contact with micro-organisms in feces. Farm animals that may transmit cryptosporidiosis to humans: cattle, particularly calves.

Dipylidium canis. A parasitic tapeworm in dogs, transmitted to humans by oral contact with micro-organisms in feces, causing gastro-intestinal illness.

Dirofilariasis. A parasitic disease of dogs and cats, transmitted to humans by bites from infected mosquitoes, causing coughing, fever, and sometimes lung damage.

Echinococcosis. A parasitic tapeworm in dogs, transmitted to humans by oral contact with micro-organisms in feces, causing damage to internal organs.

Escherichia coli (often called E. coli or coliform bacteria). A gastro-intestinal illness, caused by oral contact with micro-organisms in feces, which can be life-threatening in some people. Farm animals that may transmit E. coli to humans: cattle.

Erysipelas. A widespread bacterial infection in hogs that can cause skin sores in humans or can progress to blood or heart infection.

Giardia. A gastro-intestinal illness, caused by oral contact with micro-organisms in feces. Farm animals that may transmit giardia to humans: dogs.

Influenza Type A. A large group of viral flu variants including swine flu and avian flu, transmitted by close contact with infected animals. Farm animals that may transmit Type A influenza to humans: poultry, hogs.

Leptospirosis. A potentially severe illness, caused by direct contact of bacteria-infected urine with broken skin, mucous membranes, or the mouth. Farm animals that may transmit leptospirosis to humans: hogs, cattle, bison, sheep, goats, horses, deer and elk, dogs.

Listeriosis. A gastro-intestinal illness, caused by oral contact with micro-organisms in feces; can lead to serious infection, and in pregnant women, to infection and damage to the developing fetus. Farm animals that may transmit listeriosis to humans: hogs, cattle, bison, sheep, goats, horses, deer and elk.

Lyme disease. Caused by Borellia bacteria, and transmitted from animals to humans by tick bites, leading to a rash and later fever and more serious neurological or heart damage in humans.

Lymphocytic choriomeningitis. A virus that can infect wild house mice, but can spread to rabbits by bites or direct contact, and from there to humans, causing brain inflammation; and in pregnant women, to infection and damage to the developing fetus.

Milkers' nodules. Skin sores on the hands or arms, transmitted by direct contact with cattle infected with the parapoxvirus.

Orf. A common contagious viral disease of sheep and goats that can be transmitted to humans by direct contact, causing skin sores.

Pasteurellosis. One of the widespread bacteria that cause infection of bites and scratches and can lead to more serious infection if not promptly treated. Farm animals that may transmit pasteurellosis to humans: dogs, cats.

Psittacosis. A bacterial illness of poultry that can be transmitted to humans by inhalation of infected dust from birds, feathers, or bedding materials.

Q fever. A flu-like illness, transmitted to humans by inhaled contact with coxiella, a type of bacteria. Farm animals that may transmit Q Fever to humans: cattle, sheep, goats, llamas and alpacas, rabbits.

Rabies. A virus that in North America is usually limited to wild animals but can affect dogs, cats, or other domestic animals, and can then be transmitted to people through bites or direct contact, causing progressively serious illness leading to death if not promptly treated.

Ringworm. Small, usually round, spreading, scaly patches on the skin, caused by contact with infested bedding materials or dirt, or direct contact with animals infected with the fungus even though the animals themselves may not show symptoms. Farm animals that may transmit ringworm to humans: hogs, cattle, bison, sheep, goats, horses, llamas and alpacas, deer and elk, dogs, cats.

Salmonella. A gastro-intestinal illness, caused by oral contact with bacteria. Farm animals that may transmit salmonella to humans: poultry, hogs, cattle, bison, sheep, goats, horses, llamas and alpacas, deer and elk, rabbits, dogs, cats, ostriches and emus.

Scabies. A parasitic mite infection, transmitted to humans by direct contact with infested animals, causing itchy irritated skin. Farm animals that may transmit scabies to humans: dogs.

Streptococcus. A bacterial infection that can be transmitted to people who drink raw milk, or by oral contact after working with infected hogs, cattle, or horses. Symptoms in humans include tissue inflammation, pneumonia, and a range of others.

Toxoplasmosis. A common parasitic infection of cats, transmitted to humans by contact with feces, causing fever; and in pregnant women, to infection and damage to the developing fetus.

Tularemia. A common bacterial disease of wild rodents and rabbits, which can also affect domestic rabbits and small pets, then spreading to humans by tick or deerfly bites or by direct contact with infected animals; causes a wide range of symptoms in humans that must be treated promptly with antibiotics.

West Nile virus. An increasingly worrisome virus that affects horses and wild birds, and can be transmitted to people by mosquito bites, where it causes fever and a range of other symptoms.

Western equine encephalitis. A virus that primarily affects horses, and can be transmitted to humans by mosquito bites, where it can then cause brain infection.

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Agriculture and Agri-Food Canada
Agriculture et Agroalimentaire Canada